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Sent: Wednesday, December 16, 2020 11:16 AM
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Subject: [Non-DoD Source] HPNS Parcel E-2 Phase II RACR comments (to be renamed Phase II RACSR)
Attachments: GSUMemo_HPNS_E-2_phaseII_RACR_RTCs_Oct2020.pdf; Eng followup comments 2_Parcel E-2 Ph 2 RACR and RTCs_10-22-2020.pdf

Hi Leslie,

I just wanted to remind you of DTSC's outstanding comments (attached) which were submitted in October 2020. I know that we had a call to discuss our engineer and geologist's comments in November 2020. We anticipate that all outstanding comments will be addressed in the final draft Phase II RACSR and the forthcoming Work Plan to Evaluate Phase II Remedy Performance. Please let me know if that is not the case. The CA dept of Fish and Wildlife had no further comments. Thx.

Nina



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

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Gavin Newsom
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MEMORANDUM

TO: Juanita Bacey
Project Manager
Site Mitigation and Restoration Program
Berkeley Office

FROM: Peter Gathungu, P.E., G.E.
Senior Hazardous Substances Engineer
Engineering and Special Projects Office

10/22/2020



REVIEWER: Jesse Negherbon, Ph.D., P.E.
Senior Hazardous Substances Engineer
Engineering and Special Projects Office

J.N.

SUBJECT: REVIEW OF FINAL REMEDIAL ACTION COMPLETION REPORT FOR
PARCEL E-2 PHASE II, HUNTERS POINT NAVAL SHIPYARD, SAN
FRANCISCO, CALIFORNIA (SITE CODE: 200050)

DATE: October 22, 2020

DOCUMENT REVIEWED

Final Remedial Action Completion Report, Parcel E-2 (Phase II), Hunters Point Naval Shipyard, San Francisco, dated September 2020 (RACR), prepared by Aptim Federal Services, LLC, 4005 Port Chicago Highway, Suite 200, Concord, California 94520-1120, prepared for the Department of the Navy, Naval Facilities Engineering Command Southwest, BRAC PMO West, 33000 Nixie Way, Bldg. 50, San Diego, California 92147.

INTRODUCTION

The Engineering and Special Projects Office (ESPO) of the Department of Toxic Substances Control (DTSC) has completed its review of several sections of the Remedial Action Completion Report (RACR) for Parcel E-2, Phase II at the Hunters Point Naval Shipyard in San Francisco. The original Envirostor work request specified the following sections for review: Section 3.2.1 through 3.2.10, 3.2.13, 3.2.14, 4.1 through 4.3, Appendices B, C, K, M and P. We note that in keeping with good engineering practice we have reviewed other sections for context and where other sections referenced in the sections reviewed were available. We further note that ESPO did not perform any field oversight/visits during implementation of the work. We reviewed draft and draft final versions of the document and provided our review comments in memoranda dated March 4, 2020 and June 29, 2020, respectively. If you have any questions or comments regarding this memorandum, please contact me at (916) 255-6662 or via email at Peter.Gathungu@dtsc.ca.gov.

PROJECT SUMMARY

The Hunters Point Naval Shipyard (HPNS) is an approximate 866-acre facility located in the southeastern portion of the City and County of San Francisco on a peninsula that extends east into San Francisco Bay. An approximate 420-acre portion of the facility is on land and the remainder 446-acre-portion is under the waters of the San Francisco Bay. The Navy acquired HPNS from Bethlehem Steel between 1939 and 1941. The facility was used for shipbuilding, repair and maintenance during World War II. Activities at HPNS shifted to submarine maintenance and repair after the war until about 1974 when the facility was deactivated. The facility was also the site of the Naval Radiological Defense Laboratory (NRDL). The facility remained relatively unused between 1974 and 1976 when it was mostly leased to Triple A Machine Shop, Inc., a private ship repair company. The facility was placed on the National Priorities List (NPL) in 1989 and was designated for closure in 1991 as part of the Defense Base Realignment and Closure Act of 1990. The facility closure process at HPNS involves performance of environmental remediation to make the property available for non-defense use. The facility was divided into 11 parcels for remediation activities.

Parcel E-2 was split off Parcel E in September 2004 and encompasses an approximate 22-acre landfill and adjacent lands east and south of the landfill. The landfill and the East Adjacent area were created prior to the 1950s by reclaiming the bay margin using native soil, rock, sediment, and construction and industrial debris. The Panhandle Area was created in the 1950s by filling the bay with soil and construction debris. Ground surface elevation varies from a few feet above mean sea level (msl) along the

southwestern portion to about +30 feet above msl in the northern portion. The landfill received various shipyard wastes, including construction debris (wood, steel, concrete, soil, etc.), municipal-type trash (paper, plastics, metal), and industrial waste (sandblast waste, paint sludge, solvents, polychlorinated biphenyl (PCB) containing waste oils) from the mid 1950s to the early 1970s. The Navy tested ship shielding technologies on one part of the Panhandle and used another portion for disposal of metal slag. Portions of the East Adjacent Area were used for disposal of industrial waste including PCBs. Contaminated sediments are along the Shoreline Area. The portion of the shoreline below msl is within what has been designated as Parcel F by the Navy.

A Record of Decision (ROD) which describes the selected remedy was issued in 2012. The chemicals of concern (COCs) identified in the ROD include: metals, pesticides, PCBs, semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), dioxins, and radionuclides in soil; metals, pesticides, PCBs, and radionuclides in shoreline sediments; landfill gas; and metals, PCBs, SVOCs, volatile organic compounds (VOCs), TPH, anions, and radionuclides in groundwater.

The selected remedy consists of excavation and disposal of contaminated soil, sediment and debris; containment of remaining contamination; and monitoring, maintenance, and implementation of institutional controls (ICs) to protect human health and the environment and maintain integrity of the remedy. The remedial action was implemented as a portion of the selected remedy for Parcel E-2 and is based on the 2014 Final Design Basis Report for Parcel E-2 prepared by Engineering/Remediation Resources Group, Inc. (ERRG) and a March 2016 Remedial Action Workplan prepared by CB&I Federal Services, LLC .

ESPO has the following comment(s) and recommendation(s) on the portions of the RACR mentioned above: We have included our original March 4, 2020 comments on normal font followed by our June 29, 2020 responses in italics followed by our current responses in normal font, for ease of reference.

COMMENTS AND RECOMMENDATIONS

1. **Section 3.2.9 Perimeter Channel Outlet.** The fifth sentence states that bedding material consisting of sand with a maximum particle size of two inches was used during final grade restoration where the outfall pipe passed through the nearshore slurry wall cap. However, we note that the described two-inch material would classify as gravel and that the maximum sand particle size per the Unified Soil Classification System (USCS) is 4.75 millimeter. The text should be revised to

include the correct description of the bedding material used and the relevant construction specification should be cited.

June 2020 ESPO Response. *No further comment.*

2. **Section 3.2.14.5 Excavation and Installation.** The first sentence in the seventh paragraph states that approximately 760 cubic yards (cy) of soil and debris was excavated during the upland slurry wall construction. It is not clear if these are bank or excavated cubic yards, and if the slurry wall cap excavation materials are included. Our calculations based on the described slurry wall configuration resulted in total bank cubic yardage of more than 100 cy above the indicated number. The volume of excavated soil and debris should be reviewed to conform to the slurry wall configuration and revised if necessary.

June 2020 ESPO Response. *No further comment.*

3. **Section 4.2 Upland Slurry Wall and French Drain.** The second sentence in the third paragraph states that information collected during installation of the slurry wall together with a historical record search indicates that the obstruction encountered at a depth of about ten feet along an approximate 200-foot section of the slurry wall alignment is geologic rather than man-made. The sentence further states that Aptim recommends leaving the slurry wall as constructed without further alterations to the target depth. However, we note that the text does not discuss the field data and nature of any samples obtained to support the geologic nature of the obstruction or how the requirement to key in the slurry wall into the underlying bay mud was met. The text should be revised to include a discussion of the field sampling data/information and the effect of terminating the slurry wall on top of/within the obstruction and whether/how this termination meets the approved design.

June 2020 ESPO Response. *No further comment on keying of the slurry wall into bay mud. However, no description of the obstruction material is included in the text. The second paragraph states that 12 step-out locations were investigated using a direct push drill rig to assess the obstruction in accordance with a recommendation from the Navy. The text states that difficult drilling conditions were encountered with six locations meeting complete refusal and six locations advancing to the design depth with difficulty. The text does not include any information on the material(s) encountered at any of the 12 locations. The text should be expanded to include a summary of the materials encountered at each of the 12 locations, or at the very least, the materials encountered at the six locations that were advanced to the design depth.*

October 2020 ESPO Response. The RTC states that a Direct Push rig was used in an attempt to map a path around the perceived obstruction, but unlike rotary drilling,

no drill cuttings were removed from the hole, nor were geotechnical samples collected. It appears that the method used was unsuitable for producing any useful information to determine the nature of the obstruction or whether the slurry wall was terminated properly over a distance of more than 200-feet, along the section located over the obstruction. We note that upland slurry wall specifications in the August 2014 Final Design Basis Report, Parcel E-2, Appendix C Project Specifications, Section 02 32 00 Subsurface Drilling, Sampling, and Testing 05/10, Part 1.6.2 Field Measurements states "For the upland slurry wall, it is the sole responsibility of the contractor to select the necessary boring spacing and frequency required to properly demonstrate that the bottom of the slurry wall is installed within the most impermeable material along the wall's alignment". In the absence of any information on the nature of the obstruction material (intact rock, weathered rock, gravel, cobble, etc.) or total depth of the obstruction it is not possible to determine if the above specification was met.

We recommend data are collected to properly demonstrate how the upland slurry walls specifications were met, or alternatively, other post construction monitoring of the upland slurry wall along the obstruction alignment should be performed to verify effectiveness of the slurry wall.

4. **Table 3 Waste-Consolidation Comparison Criteria.** The comparison criteria value for lead is shown as 19,700 milligrams per kilogram (mg/kg). However, this value is ten times that shown in Table 1 Hot Spot Goals for Soil and Sediment. This value should be reviewed for accuracy and revised accordingly.

June 2020 ESPO Response. *No further comment.*

5. **Appendix C Construction As-Built Drawings. Drawing C2 Shoreline Revetment Finish Grading As-Built.** The nearshore slurry wall shown on the drawing is on the order of 1200 feet long. However, the nearshore slurry wall described in the report text is indicated to be on the order of 571 feet. In addition, the drawing does not show all the existing features, specifically Drawing C1 Pre-Existing Site Conditions shows at least three pre-existing monitoring at about the alignment of the nearshore slurry wall which are not shown in Drawing C2. In addition, Drawing C2 shows 13 extraction wells which are not shown in Drawing C1, and are not discussed in the report. The drawings and report should be reviewed for consistency and revised accordingly.

June 2020 ESPO Response. *Drawing C2 shows the near-shore slurry wall installed as part of Parcel E-2 Phase I construction. The drawing also shows monitoring wells installed as part of Phase II construction, the subject of the current RACR. The drawing does not show the location of the upland slurry wall installed as part of the Phase II construction. The Drawing C2 title block is also labeled "Parcel*

E-2 As-Builts". The RTC refers to Section 3.2.14 Upland Slurry Wall Installation for a description of the location of the upland slurry wall. However, we note that the upland slurry wall does not appear to be depicted on any as-built drawings. The Phase II remedial action completion report as-built drawings should clearly show the features installed as part of the Phase II remedial action so that they are distinguishable from pre-existing features.

October 2020 ESPO Response: The RTC states that the as-built conditions of the upland slurry wall are presented on Drawing C7. We note that the contours on Drawing C7, Upland Slurry Wall and French Drain As-Built, are not labeled. The RTC also states that the final surveyed location of the slurry wall is shown on As-Built Drawing C6 (Foundation Grading As-Built), at a larger scale, and is considered the final Phase 2 site condition. We note that Drawing C6 was not provided for review.

6. **Appendix C Construction As-Built Drawings. Drawing C6 Foundation Grading As-Built.** The contours shown on this drawing differ from those shown on Drawing C2 Shoreline Revetment Finish Grading As-Built. The text report states that Phase II remedial action completion left finished grades as foundation layer grades. The drawings should be reviewed and revised to remove the discrepancies.

June 2020 ESPO Response. *The drawing was not included in the most recent submittal. However, the contours on Drawing C2 appear to have been updated to match Drawing C6, as stated in the RTC. We have no further comment.*

7. **Appendix C Construction As-Built Drawings. Drawing C7 Upland Slurry Wall and French Drain As-Built.** The Profile View Alignment – (Upland Slurry Wall) shows a bottom slurry wall elevation of about -10.00 feet with an approximate 200-foot section with a bottom elevation of elevation 0.00 feet. Note 1 associated with the profile states that the Bay Mud for section is noncontiguous and not considered an aquitard. However, we note that the third sentence in the second paragraph in Section 3.7.2.2 Wall Depths of the August 2014 Final Design Basis Report, Parcel E-2 states that the bottom elevation of the nearshore slurry wall varies between -6 and -20 feet below msl based on the location of the underlying Bay Mud aquitard stated in the first sentence of the same paragraph. The as-built condition appears to be a deviation from the Design Basis Report (DBR), and it is not clear if the Bay Mud aquitard was engaged. The as-built condition should be evaluated against the DBR and the implications of not engaging the underlying Bay Mud on the effectiveness of the nearshore slurry wall should be evaluated and the conclusion(s) in the third paragraph in Section 7.1 Conclusions should be revised as necessary.

June 2020 ESPO Response. *Drawing C7 was not provided for review. The RTC states that as-built drawing C7 is a true and correct representation of the upland*

slurry wall. However, we note that the profile section shows the bay mud as extending across the obstruction encountered on an approximate 200-foot section of the slurry wall. This depiction appears to be incorrect as the direct-push drilling completed to evaluate the obstruction reported either complete refusal or difficult drilling which does not appear to support the presence of bay mud within the obstruction. We recommend the profile section is revised to show the correct as-built location of the bay mud layer and the notes are expanded to include an explanation of the obstruction encountered during installation, and hence the deviation from the approved design.

October 2020 ESPO Response. The RTC indicates that the notes on Drawing C7 state that the bay mud layer for this section is noncontiguous and not considered an aquitard. The RTC further states that the upland slurry wall was designed as a hanging wall and a subsurface investigation for the purpose of mapping the top of bay mud in this area was not conducted as part of the Phase II RA.

We note that the profile view of the upland slurry wall alignment still shows a bay mud layer within the obstruction although the direct push drilling is indicated to have encountered complete refusal within the obstruction. The drawing appears to indicate that the as-built condition consists of bay mud within the obstruction however, there is no data to support the depicted as-built condition. We suggest the bay mud depicted within the obstruction is deleted unless subsurface information showing the presence of bay mud is available.

8. **Appendix M Quality Control Testing Results.** The Daily – Compaction Test Report by Smith-Emery San Francisco dated 7/5/18 presents 13 field compaction test results all marked as passing. However, the specified relative compaction is shown as 95% and all the test results are between 91 and 93 percent of the maximum dry density which indicates that all the test results failed to meet the compaction specification. All the reported test results should have been indicated as failing and the appropriate box below the results table should have indicated that the material tested did not meet requirements of the jurisdiction approved documents. The compaction test report should be revised to remove the discrepancy and a discussion on the implications of the failed compaction tests on the performance of the associated work should be included in the report.

June 2020 ESPO Response. *The relevant revised pages from Appendix M were provided via email. The compaction requirement was revised from 95 to 90%. No further comment.*

9. **Appendix O Weekly Control Meeting Minutes. Project QC Meeting Notes from QC Meeting 45 (08.29.2017).** The bolded text at the bottom of Item 5 states that compaction was not performed during backfilling because the backfilling work was shoreline work and there were no compaction requirements. However, our review of

As-Built Drawing C5 Subgrade Excavation Volumes shows that 204 cubic yards of fill was placed in conjunction with the revetment and As-Built Drawing C3 Shoreline Revetment Detail shows "Compacted foundation" below the geogrid. The meeting note indicates that the DBR requirement was not followed and additionally that the "Compacted foundation" text in As-Built Drawing C3 is in error. The As-Built drawing should be revised accordingly and the implications of the presence of an uncompacted foundation layer, at least locally, on the long-term performance of the revetment should be evaluated.

June 2020 ESPO Response. *Appendix O was not provided for review. The RTC notes that the shoreline revetment construction did not begin until April 2018. The RTC states that the Project QC Meeting Notes from the 8/29/2017 meeting discuss backfilling in the tidal wetlands and panhandle area. The RTC further states that backfilling along the shoreline should be in reference to the Tidal Wetlands. The RTC did not indicate if the meeting notes were revised in the final version. The RACR was prepared for Parcel E-2 Phase II construction and material discussing features outside of the RACR scope should be clearly identified for clarity and completeness of the RACR/administrative record. We recommend notations/footnotes are included to identify material outside of the RACR scope.*

October 2020 ESPO Response. The RTC states that no revisions to the Project QC Meeting Notes from 8/29/2017 were made. The RTC further states that, "the response provided by APTIM's PQCM Chris Hanif during the meeting in 2017, **was correct provided** he was referring to tidal wetland area, specifically those areas below the tideline" (bolded text for emphasis). APTIM's PQCM response should be verified to remove the conditionality in the RTC.

10. **Appendix O Weekly Control Meeting Minutes. Project QC Meeting Notes from QC Meeting 49 (09.26.2017).** The bolded text at the end of Item 5 refers to brick as Naturally Occurring Radioactive Material (NORM) and states that the tentative plan was to leave bricks in place. The Comments/Questions section after Item 11 in the Project QC Meeting Notes from QC Meeting 53 (10.24.2017) indicates that fire brick was left in place in the North Perimeter. The Comments/Questions section after Item 11 in the Project QC Meeting Notes from QC Meeting #81 (5.15.2018) states that fire brick has NORM is not subject to Navy cleanup. The basis for considering brick, a manufactured product, as NORM is not clear. We also note that the handling and final disposition of the bricks is not discussed in the RACR text. The RACR text should be revised to include a discussion of how the bricks were handled and their final disposition, including the basis for designating them as NORM.

June 2020 ESPO Response. *Appendix O was not provided for review. The RTC states that Section 3.4.2 was revised to include how the bricks were handled and their final disposition. We find that revised text in Section 3.4.2 addresses the*

handling and final disposition of the bricks adequately. We recommend notations/footnotes are included in Appendix O for clarity and completeness.

October 2020 ESPO Response. No further comment.



Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

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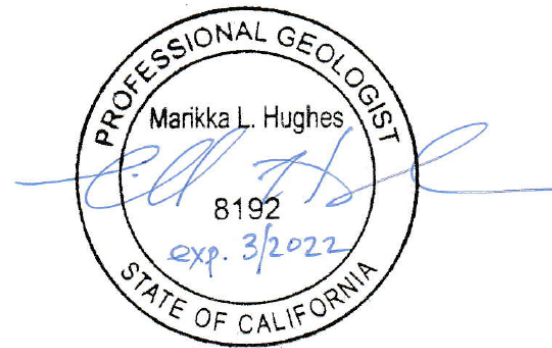
MEMORANDUM

TO: Juanita (Nina) Bacey, Project Manager
Senior Environmental Scientist
Cleanup Program, Berkeley Office
Site Mitigation and Restoration Program

FROM: Marikka Hughes, PG 8192
Engineering Geologist, Geological Services Unit
Geological Services Branch
Site Mitigation and Restoration Program

DATE: October 23, 2020

SUBJECT: **DRAFT FINAL REMEDIAL ACTION COMPLETION REPORT, PARCEL E-2 (PHASE II), HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA**



PROJECT DTSC200050-47 ACTIVITY 14718 MPC RA WR 20069439

DOCUMENT REVIEWED

As requested, I have reviewed the revisions made to the *Draft Final Remedial Action Completion Report, Parcel E-2 (Phase II), Hunters Point Naval Shipyard, San Francisco, California* (RACR), dated September 2020 and the associated response to comments (RTCs) on the December 2019 and June 2020 versions of the document. The Report and RTCs were prepared for the Naval Facilities Engineering Command Southwest (Navy) by Aptim Federal Services, LLC. The Report and RTCs were reviewed with respect to geologic and hydrogeologic interpretations and technical adequacy.

COMMENTS AND RECOMMENDATIONS

1. *Upland Slurry Wall*

As discussed in the RACR and the RTCs on previous versions of the RACR, it is believed that the obstruction that resulted in a 200-foot long gap in the slurry wall is geologic in nature. Additionally, the text indicates that direct-push soil borings were used to confirm the obstruction, but boring logs for these locations do not appear to have been included in the RACR to support this claim. Further, if direct-push drilling technologies are inadequate when the presence of bedrock is suspected.

A concern remains that there is a 200-foot long and 10-foot deep gap in the slurry wall. The existence of this gap creates a potential funnel to direct groundwater into the Parcel E-2 landfill, the opposite of the intent of the slurry wall which was to divert groundwater towards the freshwater wetland. Monitoring of this gap in the slurry wall is needed to evaluate if it is behaving as the Navy believes or if it is funneling groundwater into the landfill and potentially causing contaminants to leach from the waste. It is recommended that groundwater monitoring wells be installed to monitor the upland slurry wall gap. In addition, monitoring of the wells and piezometers on both the landfill and bayside of the nearshore slurry wall is recommended to evaluate if increased groundwater flow into the landfill is resulting in downgradient impacts. Monitoring of the bayside piezometers is especially necessary to confirm that the nearshore slurry wall is functioning adequately.

2. *Response to Comment 5e, Section 3.2.15 Installation of Monitoring Wells and Extraction Wells and Piezometers*

The RTC indicates that sampling events occurred at adjacent areas as part of the 2019 groundwater monitoring program and refers to the 2014 Remedial Action Monitoring Plan (RAMP). However, the remedy was not installed as planned and therefore, the monitoring plan associated with it should be altered to adequately monitor the groundwater on the bayside of the nearshore slurry wall. It is recommended that the RAMP be revised now that the remedies have been installed.

If you have any questions or comments regarding this memorandum, please contact Marikka Hughes at (510) 540-3926 or marikka.hughes@dtsc.ca.gov or Jon Buckalew (Buck) King at (510) 540-3955 or buck.king@dtsc.ca.gov.

Reviewed by: Gerard Aarons, PG, CHG
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